Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

Adjuvant systemic therapy and adjuvant radiation therapy for stage I to IIIA completely resected non–small-cell lung cancers: American Society of Clinical Oncology/Cancer Care Ontario clinical practice guideline update.

Bibliographic Source(s)

Kris MG, Gaspar LE, Chaft JE, Kennedy EB, Azzoli CG, Ellis PM, Lin SH, Pass HI, Seth R, Shepherd FA, Spigel DR, Strawn JR, Ung YC, Weyant M. Adjuvant systemic therapy and adjuvant radiation therapy for stage I to IIIA completely resected non-small-cell lung cancers: American Society of Clinical Oncology/Cancer Care Ontario clinical practice guideline update. J Clin Oncol. 2017 Sep 1;35(25):2960-74. [83 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Pisters KM, Evans WK, Azzoli CG, Kris MG, Smith CA, Desch CE, Somerfield MR, Brouwers MC, Darling G, Ellis PM, Gaspar LE, Pass HI, Spigel DR, Strawn JR, Ung YC, Shepherd FA. Cancer Care Ontario and American Society of Clinical Oncology adjuvant chemotherapy and adjuvant radiation therapy for stages I-IIIA resectable non-small-cell lung cancer guideline. J Clin Oncol. 2007 Dec 1;25(34):5506-18. [76 references]

This guideline meets NGC's 2013 (revised) inclusion criteria.

NEATS Assessment

National Guideline Clearinghouse (NGC) has assessed this guideline's adherence to standards of trustworthiness, derived from the Institute of Medicine's report Clinical Practice Guidelines We Can Trust.

= Poor = Fair = Good = Very Good = Excellent

Assessment	Standard of Trustworthiness
YES	Disclosure of Guideline Funding Source

▮▮▮▮▮	Disclosure and Management of Financial Conflict of Interests
	Guideline Development Group Composition
YES	Multidisciplinary Group
YES	Methodologist Involvement
▮▮▮▮▯	Patient and Public Perspectives
	Use of a Systematic Review of Evidence
▮▮▮▮▮	Search Strategy
▮▮▮▮▮	Study Selection
▮▮▮▮▮	Synthesis of Evidence
	Evidence Foundations for and Rating Strength of Recommendations
▮▮▮▮▮	Grading the Quality or Strength of Evidence
▮▮▮▮▮	Benefits and Harms of Recommendations
▮▮▮▮▮	Evidence Summary Supporting Recommendations
▮▮▮▮▮	Rating the Strength of Recommendations
▮▮▮▮▯	Specific and Unambiguous Articulation of Recommendations
▮▮▮▯▯	External Review
▮▮▮▮▮	Updating

Recommendations

Major Recommendations

Definitions for the rating of evidence (High, Intermediate, Low, Insufficient); types of recommendations (Evidence based, Formal consensus, Informal consensus, No recommendation); and strength of recommendations (Strong, Moderate, Weak) are provided at the end of the "Major Recommendations" field.

Clinical Question 1

What is the overall survival (OS) benefit of adjuvant systemic therapy in patients with completely resected stage I to IIIA non-small-cell lung cancers (NSCLCs)?

Recommendation 1.1: Stage IA: Adjuvant chemotherapy is not recommended (Type: evidence based and panel consensus, harms outweigh benefits; Evidence quality: moderate; Strength of recommendation: strong).

Recommendation 1.2: Stage IB: Adjuvant cisplatin-based chemotherapy is not recommended for routine use. A postoperative multimodality evaluation, including a consultation with a medical oncologist, is recommended to assess benefits and risks for adjuvant chemotherapy for each patient (Type: evidence based and panel consensus, benefits outweigh harms, especially in patients with larger tumors; Evidence quality: intermediate; Strength of recommendation: moderate).

Recommendation 1.3: Stages IIA/B and IIIA: Adjuvant cisplatin-based chemotherapy is recommended (Type: evidence based and panel consensus, benefits outweigh harms; Evidence quality: high; Strength of recommendation: strong).

Clinical Question 2

What is the OS benefit of adjuvant radiation therapy in patients with completely resected stage I to IIIA NSCLCs?

Recommendation 2.1: Stage IA/B and IIA/B: Adjuvant radiation therapy is not recommended (Type: evidence based and panel consensus, harms outweigh benefits; Evidence quality: intermediate; Strength of recommendation: strong).

Recommendation 2.2: Stage IIIA: Adjuvant radiation therapy is not recommended for routine use. A postoperative multimodality evaluation, including a consultation with a radiation oncologist, is recommended to assess benefits and risks of adjuvant radiotherapy in patients with N2 disease (Type: evidence based and panel consensus, benefits outweigh harms; Evidence quality: intermediate; Strength of recommendation: moderate).

Definitions

Guide for Rating Strength of Evidence

Rating for Strength of Evidence	Definition
High	High confidence that the available evidence reflects the true magnitude and direction of the net effect (i.e., balance of benefits versus harms) and that further research is very unlikely to change either the magnitude or direction of this net effect.
Intermediate	Moderate confidence that the available evidence reflects the true magnitude and direction of the net effect. Further research is unlikely to alter the direction of the net effect; however, it might alter the magnitude of the net effect.
Low	Low confidence that the available evidence reflects the true magnitude and direction of the net effect. Further research may change either the magnitude and/or direction of this net effect.
Insufficient	Evidence is insufficient to discern the true magnitude and direction of the net effect. Further research may better inform the topic. The use of the consensus opinion of experts is reasonable to inform outcomes related to the topic.

Guide for Types of Recommendations

Type of Recommendation	Definition
Evidence-Based	There was sufficient evidence from published studies to inform a recommendation to guide clinical practice.
Formal Consensus	The available evidence was deemed insufficient to inform a recommendation to guide clinical practice. Therefore, the Expert Panel used a formal consensus process to reach this recommendation, which is considered the best current guidance for practice. The Panel may choose to provide a rating for the strength of the recommendation (i.e., "strong," "moderate," or "weak"). The results of the formal consensus process are summarized in the guideline and reported in the data supplement (see the "Availability of Companion Documents" field).
Informal	The available evidence was deemed insufficient to inform a recommendation to

Type of Recommendation	Definition
Consensus	guide clinical practice. The recommendation is considered the best current guidance for practice, based on informal consensus of the Expert Panel. The Panel agreed that a formal consensus process was not necessary for reasons described in the literature review and discussion. The Panel may choose to provide a rating for the strength of the recommendation (i.e., "strong," "moderate," or "weak").
No Recommendation	There is insufficient evidence, confidence, or agreement to provide a recommendation to guide clinical practice at this time. The Panel deemed the available evidence as insufficient and concluded it was unlikely that a formal consensus process would achieve the level of agreement needed for a recommendation.

Guide for Strength of Recommendations

Rating for Strength of Recommendation	Definition
Strong	There is high confidence that the recommendation reflects best practice. This is based on: a) strong evidence for a true net effect (e.g., benefits exceed harms); b) consistent results, with no or minor exceptions; c) minor or no concerns about study quality; and/or d) the extent of panelists' agreement. Other compelling considerations (discussed in the guideline's literature review and analyses) may also warrant a strong recommendation.
Moderate	There is moderate confidence that the recommendation reflects best practice. This is based on: a) good evidence for a true net effect (e.g., benefits exceed harms); b) consistent results, with minor and/or few exceptions; c) minor and/or few concerns about study quality; and/or d) the extent of panelists' agreement. Other compelling considerations (discussed in the guideline's literature review and analyses) may also warrant a moderate recommendation.
Weak	There is some confidence that the recommendation offers the best current guidance for practice. This is based on: a) limited evidence for a true net effect (e.g., benefits exceed harms); b) consistent results, but with important exceptions; c) concerns about study quality; and/or d) the extent of panelists' agreement. Other considerations (discussed in the guideline's literature review and analyses) may also warrant a weak recommendation.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Stages I to IIIA resectable non-small-cell lung cancer (NSCLC)

Guideline Category

Assessment of Therapeutic Effectiveness

Management

Treatment

Clinical Specialty

Oncology

Radiation Oncology

Intended Users

Physicians

Guideline Objective(s)

- To address two principal questions in the treatment of patients with completely resected non-small-cell lung cancers (NSCLCs): the overall survival benefit and role of adjuvant systemic therapy, including chemotherapy and newer targeted therapy and immunotherapy options, and adjuvant radiation therapy
- To reaffirm or modify the recommendations contained in the 2007 Cancer Care Ontario (CCO)/American Society of Clinical Oncology (ASCO) joint guideline on adjuvant therapy in completely resected NSCLC to verify the relevance of the guideline recommendations

Target Population

Patients with completely resected stage I to IIIA non-small-cell lung cancers (NSCLCs) (completely resected, defined as no macroscopic disease and uninvolved resection margins pathologically after surgery)

Interventions and Practices Considered

1. Adjuvant cisplatin-based chemotherapy
2. Adjuvant radiation therapy
3. Postoperative multimodality evaluation, including a consultation with a medical oncologist or radiation oncologist

Major Outcomes Considered

- Overall survival (OS)
- Disease-free survival (DFS)
- Adverse events, toxicity, and complications related to treatment

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Systematic Literature Review

American Society for Clinical Oncology (ASCO) guidelines are based on systematic reviews of the

literature. A protocol for each systematic review defines parameters for a targeted literature search. Additional parameters include relevant study designs, literature sources, types of reports, and pre-specified inclusion and exclusion criteria for literature identified. The protocol for this guideline was reviewed and approved by the ASCO Clinical Practice Guidelines Committee's Thoracic Cancer Guideline Advisory Group (GAG).

In 2007, the ASCO and Cancer Care Ontario (CCO) published a joint guideline on adjuvant chemotherapy and adjuvant radiation therapy for stage I to IIIA resectable non-small-cell lung cancer (NSCLC). CCO recently updated the systematic review on adjuvant chemotherapy, bringing it current to January 2016, and expanded the search strategy to include recent trials of targeted therapy and immunotherapy. That CCO systematic review and accompanying guideline recommendations serve as the basis for the adjuvant systemic therapy portion of this updated CCO/ASCO joint guideline. To improve the currency of the evidence base, a final literature search for any additional adjuvant systemic therapy trials published between January and June 2016 was conducted.

In 2015, ASCO endorsed the American Society for Radiation Oncology's (ASTRO's) evidence-based guideline on adjuvant radiation therapy in locally advanced NSCLC, with a systematic review that was current to March 2013. The ASTRO systematic review and accompanying guideline recommendations serve as the basis for the adjuvant radiation therapy portion of this guideline. To update the evidence base, a search for any additional adjuvant radiation therapy trials that were published between March 2013 and June 2016 was conducted.

Literature Search Strategy

MEDLINE was searched using PubMed on June 21, 2016, using keywords and MeSH terms related to NSCLC and chemotherapy, radiation therapy, targeted therapy, and immunotherapy. The complete literature search strategy used in the PubMed database is available in Data Supplement 1 (see the "Availability of Companion Documents" field). Reference lists of included articles were scanned for additional eligible citations.

Study Selection Criteria

Publications with the following study designs were eligible for inclusion in the evidence base:

- Systematic reviews of randomized controlled trials (RCTs) with or without meta-analyses,
- Phase III RCTs,
- Observational comparative studies based on the:
  - National Cancer Database (NCDB), a large, prospectively acquired database that is gathered and maintained by the American College of Surgeons, the Commission on Cancer, and the American Cancer Society;
  - SEER Program database, which collects registry data on cancer cases from various locations and sources throughout the United States (seer.cancer.gov/about).

Studies were considered for inclusion if they reported the following outcomes by tumor, node and metastasis (TNM) stage for comparisons of surgery alone versus surgery plus adjuvant systemic therapy or surgery plus radiation therapy with or without systemic therapy in the target population of patients with completely resected lung cancers (i.e., no macroscopic disease and uninvolved resection margins after surgery):

- Overall survival (OS),
- Disease-free survival (DFS),
- Adverse events.

Articles were not considered if they were:

- Published only as an abstract;
- Trials of neoadjuvant (i.e., preoperative) chemotherapy;
- Trials of tegafur and uracil;

Included patients with incomplete resections (i.e., had positive margins or macroscopic residual disease);
Noncomparative study designs, including editorials, commentaries, letters, news articles, case reports, and narrative reviews;
Non-English language publications.

Number of Source Documents

Six papers met selection criteria.

See also Data Supplement 2 (see the "Availability of Companion Documents" field) for a Quality of Reporting of Meta-analyses (QUOROM) Diagram showing the study selection process.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Guide for Rating Strength of Evidence

Rating for Strength of Evidence	Definition
High	High confidence that the available evidence reflects the true magnitude and direction of the net effect (i.e., balance of benefits versus harms) and that further research is very unlikely to change either the magnitude or direction of this net effect.
Intermediate	Moderate confidence that the available evidence reflects the true magnitude and direction of the net effect. Further research is unlikely to alter the direction of the net effect; however, it might alter the magnitude of the net effect.
Low	Low confidence that the available evidence reflects the true magnitude and direction of the net effect. Further research may change either the magnitude and/or direction of this net effect.
Insufficient	Evidence is insufficient to discern the true magnitude and direction of the net effect. Further research may better inform the topic. The use of the consensus opinion of experts is reasonable to inform outcomes related to the topic.

Guide for Rating of Potential for Bias

Rating of Potential for Bias	Definitions for Rating Potential for Risk of Bias in Randomized Controlled Trials
Low risk	No major features in the study that risk biased results, and none of the limitations are thought to decrease the validity of the conclusions. The study avoids problems such as failure to apply true randomization, selection of a population unrepresentative of the target patients, high dropout rates, and no intention-to-treat analysis; and key study features are described clearly (including the population, setting, interventions, comparison groups, measurement of outcomes, and reasons for dropouts).
Intermediate	The study is susceptible to some bias, but flaws are not sufficient to invalidate the results. Enough of the items introduce some uncertainty about the validity of the conclusions. The study does not meet all the criteria required for a rating of good quality, but no flaw is likely to cause major bias. The study may be missing information, making it difficult to assess limitations and potential problems.
High risk	There are significant flaws that imply biases of various types that may invalidate the results. Several of the items introduce serious uncertainty about the validity of the conclusions. The study has serious errors in design, analysis, or reporting; large

Rating of Potential for Bias	Definitions for Rating Potential for Risk of Bias in Randomized Controlled Trials
	amounts of missing information; or discrepancies in reporting

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Data Extraction

Literature search results were reviewed and deemed appropriate for full text review by two American Society of Clinical Oncology (ASCO) staff reviewers in consultation with the Expert Panel Co-Chairs. Data were extracted by two staff reviewers and subsequently checked for accuracy through an audit of the data by another ASCO staff member. Disagreements were resolved through discussion and consultation with the Co-Chairs if necessary. Evidence tables are provided in the guideline and/or in Data Supplements 1 and 2 (see the "Availability of Companion Documents" field).

Study Quality Assessment

Study quality was formally assessed for the studies identified. Design aspects related to the individual study quality were assessed by one reviewer and included factors such as blinding, allocation concealment, placebo control, intention to treat, funding sources, etc. The risk of bias is assessed as "low," "intermediate," or "high" for most of the identified evidence (see the "Rating Scheme for the Strength of the Evidence" field).

Quality Assessment

Quality assessments conducted by Cancer Care Ontario (CCO) were adopted for this guideline and have been published elsewhere. Briefly, the Non-Small Cell Lung Cancer Collaborative Group (NSCLCCG) meta-analysis scored well on the Assessing the Methodological Quality of Systematic Reviews (AMSTAR) tool because it included an a priori design and comprehensive literature search, provided characteristics of included studies, and reported on heterogeneity. However, the NSCLCCG authors did not assess the likelihood of publication bias or the quality of the included studies or state any conflicts of interest. In a quality assessment of individual phase III trials of chemotherapy included in the NSCLCCG meta-analysis and CCO review, studies were judged using the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) methodology to be at a moderate to high risk of bias due to lack of reporting of allocation concealment during randomization and lack of blinding. Two newer trials that were not included in the meta-analyses were also at risk for bias due to lack of blinding. The quality of evidence for trials of immunotherapy and epidermal growth factor receptor-tyrosine kinase inhibitors (EGFR-TKIs) was judged to be moderate due to inconsistency of comparators between trials. Evidence from National Cancer Database (NCDB) or Surveillance, Epidemiology, and End Results (SEER) is considered low quality because of the retrospective, nonrandomized nature of the data, which increases the risk of bias in the estimated effect.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Guideline Questions

This clinical practice guideline addresses two overarching clinical questions:

What is the benefit of adjuvant systemic therapy in patients with completely resected stage I to IIIA non-small-cell lung cancer (NSCLCs)?
What is the benefit of adjuvant radiation therapy in patients with completely resected stage I to IIIA NSCLCs?

Expert Panel Composition

The American Society of Clinical Oncology (ASCO) Clinical Practice Guidelines Committee (CPGC) convened an Expert Panel with multidisciplinary representation in medical oncology, radiation oncology, surgical oncology, and patient/advocacy representation. The Expert Panel was led by two Co-Chairs who had primary responsibility for the development and timely completion of the guideline. For this guideline product, the Co-Chairs selected additional members to assist in the development and review of the guideline drafts.

Guideline Development Process

The Expert Panel met on several occasions and corresponded frequently through e-mail; progress on guideline development was driven primarily by the Co-Chairs/Steering Committee along with ASCO staff. The purpose of the meetings was for members to contribute content, provide critical review, interpret evidence, and finalize the guideline recommendations based upon the consideration of the evidence.*

*If Consensus Methods were used, then: The Expert Panel was supplemented by additional experts recruited to rate their agreement with the drafted recommendations as part of the consensus process. The entire membership of experts is referred to as the Consensus Panel. The Co-Chairs/Steering Committee and ASCO staff prepared a draft guideline for review and rating by the Consensus Panel.

Development of Recommendations

The guideline recommendations were crafted, in part, using the GuideLines Into DEcision Support (GLIDES) methodology and accompanying BRIDGE-Wiz software™. This method helps Guideline Expert Panels systematically develop clear, translatable, and implementable recommendations using natural language, based on the evidence and assessment of its quality to increase usability for end users. The process incorporates distilling the actions involved, identifying who will carry them out, to whom, under what circumstances, and clarifying if and how end users can carry out the actions consistently. This process helps the Expert Panel focus the discussion, avoid using unnecessary and/or ambiguous language, and clearly state its intentions.

In addition, a guideline implementability review is conducted. Based on the implementability review, revisions were made to the draft to clarify recommended actions for clinical practice. Ratings for the type and strength of recommendation, evidence, and potential bias are provided with each recommendation (see the Methodology Supplement [see the "Availability of Companion Documents" field]).

Rating Scheme for the Strength of the Recommendations

Guide for Types of Recommendations

Type of Recommendation	Definition
Evidence-Based	There was sufficient evidence from published studies to inform a recommendation to guide clinical practice.
Formal Consensus	The available evidence was deemed insufficient to inform a recommendation to guide clinical practice. Therefore, the Expert Panel used a formal consensus process to reach this recommendation, which is considered the best current guidance for practice. The Panel may choose to provide a rating for the strength of the recommendation (i.e., "strong," "moderate," or "weak"). The results of the formal consensus process are summarized in the guideline and reported in the data supplement (see the "Availability of Companion Documents" field).
Informal Consensus	The available evidence was deemed insufficient to inform a recommendation to guide clinical practice. The recommendation is considered the best current guidance for practice, based on informal consensus of the Expert Panel. The Panel

Type of Recommendation	Definition
	agreed that a formal consensus process was not necessary for reasons described in the literature review and discussion. The Panel may choose to provide a rating for the strength of the recommendation (i.e., "strong," "moderate," or "weak").
No Recommendation	There is insufficient evidence, confidence, or agreement to provide a recommendation to guide clinical practice at this time. The Panel deemed the available evidence as insufficient and concluded it was unlikely that a formal consensus process would achieve the level of agreement needed for a recommendation.

Guide for Strength of Recommendations

Rating for Strength of Recommendation	Definition
Strong	There is high confidence that the recommendation reflects best practice. This is based on: a) strong evidence for a true net effect (e.g., benefits exceed harms); b) consistent results, with no or minor exceptions; c) minor or no concerns about study quality; and/or d) the extent of panelists' agreement. Other compelling considerations (discussed in the guideline's literature review and analyses) may also warrant a strong recommendation.
Moderate	There is moderate confidence that the recommendation reflects best practice. This is based on: a) good evidence for a true net effect (e.g., benefits exceed harms); b) consistent results, with minor and/or few exceptions; c) minor and/or few concerns about study quality; and/or d) the extent of panelists' agreement. Other compelling considerations (discussed in the guideline's literature review and analyses) may also warrant a moderate recommendation.
Weak	There is some confidence that the recommendation offers the best current guidance for practice. This is based on: a) limited evidence for a true net effect (e.g., benefits exceed harms); b) consistent results, but with important exceptions; c) concerns about study quality; and/or d) the extent of panelists' agreement. Other considerations (discussed in the guideline's literature review and analyses) may also warrant a weak recommendation.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Members of the multidisciplinary Expert Panel, with expertise in medical, radiation, and surgical oncology, were responsible for reviewing and approving the penultimate version of guideline, which was then circulated for external review and submitted to *Journal of Clinical Oncology* for editorial review and consideration for publication. A patient representative and a representative from the Practice Guidelines Implementation Network were also included on the panel. All American Society of Clinical Oncology (ASCO) guidelines are ultimately reviewed and approved by the Expert Panel and the ASCO Clinical Practice Guideline Committee before publication. After the ASCO process was completed, Cancer Care Ontario (CCO) provided approval through its Program in Evidence-based Care approval process.

The ASCO Clinical Practice Guideline Committee approved this guideline on October 31, 2016.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- One study evaluated the role of adjuvant chemotherapy in a National Cancer Database (NCDB) data set of 25,267 patients who underwent complete resection from 2004 to 2011. Approximately 20% (4,996) received adjuvant chemotherapy, which was associated with significantly improved median survival and overall survival (OS) for all tumor size groups, from 3.1 to 7 cm, grouped by 1-cm intervals, within the T2 stage.
- Using the Lung Adjuvant Cisplatin Evaluation (LACE) data to estimate absolute benefit, adjuvant chemotherapy raises 5-year survival from 64% up to 67% for stage IB, from 39% up to 49% for stage II, and from 26% up to 39% for stage IIIA disease extent.

Refer to the "Quality Assessment" and "Key Evidence" sections of the original guideline document for further details on benefits of specific recommendations.

Potential Harms

- In the Lung Adjuvant Cisplatin Evaluation (LACE) meta-analysis of cisplatin-based chemotherapy, the rate of overall grade 3 to 4 toxicity was 66% among 1,190 patients in four trials for which this information was available. With data from five trials, the rate of grade 4 toxicity was 32%. The most frequent toxicity was neutropenia (grade 3, 9%; grade 4, 28%); however, the rate was highly variable across trials, likely due to differing methods of surveillance and data collection. There were 19 chemotherapy-related deaths (0.9%) reported.
- The most commonly encountered adverse events with radiation therapy have previously been reported in a meta-analysis to be mild esophagitis, dysphagia, and odynophagia. In that study, cough and pneumonitis requiring steroid therapy were the most common pulmonary toxicities, radiation myelitis was reported in one patient, and no severe late complications were noted. Late complications were few, although analysis of this outcome was likely limited by the follow-up duration. The adverse effect of postoperative radiotherapy (PORT) on cardiac events has not been adequately studied.

Qualifying Statements

Qualifying Statements

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stages of diseases. This information does not mandate any particular course of medical care. Further, the information is not intended to substitute for the independent professional judgment of the treating provider, as the information does not account for individual variation among patients. Recommendations reflect high, moderate, or low confidence that the recommendation reflects the net effect of a given course of action. The use of words like "must," "must not," "should," and "should not" indicates that a course of action is recommended or not recommended for either most or many patients, but there is latitude for the treating physician to select other courses of action in individual cases. In all cases, the selected course of action should be considered by the treating provider in the context of treating the individual patient. Use of the information is voluntary. ASCO provides this information on an "as is" basis and makes no warranty, express or implied, regarding the information. ASCO specifically disclaims any warranties of merchantability or fitness for a particular use or purpose. ASCO assumes no responsibility for any injury or damage to persons or property arising out of or related to any use of this information, or for any errors or omissions.

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- Refer to the "Health Disparities" and "Multiple Chronic Conditions" sections in the in the original guideline document for additional qualifying information.

Implementation of the Guideline

Description of Implementation Strategy

American Society of Clinical Oncology (ASCO) guidelines are developed for implementation across health settings. Barriers to implementation include the need to increase awareness of the guideline recommendations among front-line practitioners and survivors of cancer and caregivers, providing adequate services in the face of limited resources, as well as the challenge of discriminating between multiple guideline products from various sources. The guideline Bottom Line Box was designed to facilitate implementation of recommendations. This guideline will be distributed widely through the ASCO Practice Guideline Implementation Network. ASCO guidelines are posted on the ASCO Web site and most often published in *Journal of Clinical Oncology* and *Journal of Oncology Practice*.

For additional information on the ASCO implementation strategy, please see the ASCO Web site .

Implementation Tools

Patient Resources

Quick Reference Guides/Physician Guides

Slide Presentation

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Kris MG, Gaspar LE, Chaft JE, Kennedy EB, Azzoli CG, Ellis PM, Lin SH, Pass HI, Seth R, Shepherd FA, Spigel DR, Strawn JR, Ung YC, Weyant M. Adjuvant systemic therapy and adjuvant radiation therapy for stage I to IIIA completely resected non-small-cell lung cancers: American Society of Clinical Oncology/Cancer Care Ontario clinical practice guideline update. J Clin Oncol. 2017 Sep 1;35(25):2960-74. [83 references] PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2017 Sep 1

Guideline Developer(s)

American Society of Clinical Oncology - Medical Specialty Society

Cancer Care Ontario - State/Local Government Agency [Non-U.S.]

Source(s) of Funding

American Society of Clinical Oncology

Guideline Committee

American Society of Clinical Oncology/Cancer Care Ontario Clinical Practice Guideline Update Expert Panel

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Guideline and Conflicts of Interest

The Expert Panel was assembled in accordance with American Society of Clinical Oncology's (ASCO's) Conflict of Interest Policy Implementation for Clinical Practice Guidelines ("Policy," found at http://www.asco.org/rwc). All members of the Expert Panel completed ASCO's disclosure form, which requires disclosure of financial and other interests, including relationships with commercial entities that are reasonably likely to experience direct regulatory or commercial impact as a result of promulgation of the guideline. Categories for disclosure include employment; leadership; stock or other ownership; honoraria, consulting or advisory role; speaker's bureau; research funding; patents, royalties, other intellectual property; expert testimony; travel, accommodations, expenses; and other relationships. In accordance with the Policy, the majority of the members of the Expert Panel did not disclose any relationships constituting a conflict under the Policy.

Authors' Disclosures and Potential Conflicts of Interest

The following represents disclosure information provided by authors of the guideline. All relationships are considered compensated. Relationships are self-held unless noted. I = Immediate Family Member, Inst = My Institution. Relationships may not relate to the subject matter of this manuscript. For more information about ASCO's conflict of interest policy, please refer to www.asco.org/rwc or ascopubs.org/jco/site/ifc .

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Consulting or Advisory Role: AstraZeneca, ARIAD Pharmaceuticals, Genentech
Research Funding: Puma Biotechnology (Inst), Genentech (Inst)

Laurie E. Gaspar
No relationship to disclose

Jamie E. Chaft
Honoraria: DAVA Oncology
Consulting or Advisory Role: Genentech, AstraZeneca
Research Funding: Genentech (Inst), Bristol-Myers Squibb (Inst), AstraZeneca (Inst)

Erin B. Kennedy
No relationship to disclose

Christopher G. Azzoli
No relationship to disclose

Peter M. Ellis
Honoraria: Novartis, Pfizer
Consulting or Advisory Role: Pfizer
Other Relationship: Celgene, Mylan

Steven H. Lin

Honoraria: ProCure, US Oncology, AstraZeneca
Research Funding: STCube Pharmaceuticals, Genentech, Peregrine Pharmaceuticals, Hitachi Chemical
Travel, Accommodations, Expenses: STCube Pharmaceuticals, US Oncology

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Honoraria: Genentech (I), Genomic Health (I)
Consulting or Advisory Role: AstraZeneca
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No relationship to disclose

Frances A. Shepherd
Stock or Other Ownership: Eli Lilly, AstraZeneca
Honoraria: Eli Lilly, AstraZeneca, Bristol-Myers Squibb, Genentech, Merck
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Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Pisters KM, Evans WK, Azzoli CG, Kris MG, Smith CA, Desch CE, Somerfield MR, Brouwers MC, Darling G, Ellis PM, Gaspar LE, Pass HI, Spigel DR, Strawn JR, Ung YC, Shepherd FA. Cancer Care Ontario and American Society of Clinical Oncology adjuvant chemotherapy and adjuvant radiation therapy for stages I-IIIA resectable non-small-cell lung cancer guideline. J Clin Oncol. 2007 Dec 1;25(34):5506-18. [76 references]

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Available from the American Society of Clinical Oncology (ASCO) Web site.

Availability of Companion Documents

The following are available:

- Adjuvant systemic therapy and adjuvant radiation therapy for stage I to IIIA completely resected non-small-cell lung cancers: American Society of Clinical Oncology (ASCO)/Cancer Care Ontario (CCO) clinical practice guideline update. Methodology supplement. Alexandria (VA): American Society of Clinical Oncology (ASCO); 2017. 19 p. Available from the American Society of Clinical Oncology (ASCO) Web site.
- Adjuvant systemic therapy and adjuvant radiation therapy for stage I to IIIA completely resected non-small-cell lung cancers: ASCO/CCO clinical practice guideline update. Data supplements 1-3. Alexandria (VA): American Society of Clinical Oncology (ASCO); 2017. 4 p. Available from the ASCO Web site.
- Adjuvant systemic therapy and adjuvant radiation therapy for stage I to IIIA completely resected non-small-cell lung cancers: ASCO/CCO clinical practice guideline update. Slide set. Alexandria (VA): American Society of Clinical Oncology (ASCO); 2017. 14 p. Available in PowerPoint and PDF from the ASCO Web site.
- Adjuvant systemic therapy and adjuvant radiation therapy for stage I to IIIA completely resected non-small-cell lung cancers: ASCO/CCO clinical practice guideline update. Summary of recommendations. Alexandria (VA): American Society of Clinical Oncology (ASCO); 2017. 2 p. Available from the ASCO Web site.

Patient Resources

The following is available:

- Lung cancer - non-small cell. Patient information. [internet]. Alexandria (VA): American Society of Clinical Oncology (ASCO); 2017. Available from the Cancer.Net Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

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